

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Utilities Telecom Council and Winchester)	RM-11429
Cator, LLC)	
)	
Petition for Rulemaking to Establish Rules)	
Governing Critical Infrastructure Industry)	
Fixed Service Operations in the 14.0–14.5 GHz)	
Band)	

OPPOSITION OF ARINC

ARINC Incorporated (“ARINC”), in response to the Commission’s May 27, 2008, Public Notice,¹ hereby opposes the Petition for Rulemaking (“Petition”) filed on behalf of the Utilities Telecom Council (“UTC”) and Winchester Cator, LLC (“Winchester” and collectively with UTC the “Petitioners”) in the matter referenced above.² The Petition asks the FCC to start a proceeding to allocate the 14.0–14.5 GHz band on a secondary basis for terrestrial fixed use by members of “critical infrastructure industries” (“CII”) and for commercial users. As shown below, this proposed use would cause significant interference to current satellite services offered in this band—especially the secondary Aeronautical Mobile Satellite Service (“AMSS”). UTC and Winchester offer no adequate suggestion for mitigating the inevitable congestion and interference, and nothing in the Petition even addresses interference concerns for current

¹ See *Consumer and Governmental Affairs Bureau, Reference Information Center, Petitions For Rulemaking Filed*, Public Notice, Report No. 2868 (May 27, 2008).

² Utilities Telecom Council and Winchester Cator, LLC, Petition for Rulemaking to Establish Rules Governing Critical Infrastructure Industry Fixed Service Operations in the 14.0–14.5 GHz Band (filed May 6, 2008) (“Petition”).

secondary users. Moreover, the resulting interference in this band conflicts with the Petition's stated CII purpose and there is no real demonstrated need for additional spectrum in any event. Accordingly, ARINC urges the Commission to deny the Petition or, as a minimum, elevate Ku-band AMSS downlinks to primary status, as ARINC has requested, before considering the newly-proposed terrestrial use sought by the Petitioners.

I. BACKGROUND

ARINC is the communications company of the U.S. air transport industry. Formed in 1929 at the suggestion of the Federal Radio Commission, ARINC provides communication services among U.S. and foreign aircraft. ARINC's air operational control networks deliver critical information, including the weight and balance of aircraft, weather data, and in-flight messages regarding airframe and engine maintenance.. Of particular relevance to this proceeding, ARINC offers SKYLinkSM AMSS to business jets using Ku-band FSS satellites communicating with blanket licensed airborne terminals.

ARINC's aeronautical earth stations ("AES") are licensed in the 14.0–14.5 GHz band on a secondary basis³ and are subject to a pending proceeding considering final service rules.⁴ A similar rulemaking is considering a primary service allocation in this band for vehicle-mounted earth stations ("VMES")⁵ and ARINC has requested identical treatment for AMSS in that proceeding.⁶ In addition to these services, this band is allocated to Fixed Satellite Services ("FSS") on a primary basis, including over a million blanket-licensed VSAT remote terminals,

³ See *ARINC Incorporated*, 20 F.C.C. Rcd 7553 (2005) (Order and Authorization).

⁴ See *Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands Allocated to the Fixed Satellite Service*, 20 F.C.C. Rcd 2906 (2005) (Notice of Proposed Rulemaking).

⁵ *Vehicle-Mounted Earth Stations in Certain Frequency Bands Allocated to the Fixed-Satellite Service*, 22 F.C.C. Rcd 9649 (2007) (Notice of Proposed Rule Making).

⁶ Reply Comments of ARINC, IB Docket No. 07-101 (filed Sept. 4, 2007).

many individually licensed earth stations used for point-to-point communications, and earth stations on vessels or “ESVs.”

Winchester and UTC ask the FCC to allocate spectrum in this heavily used 14.0–14.5 GHz band on a secondary basis for CII entities in the U.S.⁷ Under the proposal, whenever the spectrum is not needed by CII users, Winchester would lease it for a variety of commercial terrestrial uses.

II. THE PETITION PRESENTS SIGNIFICANT TECHNICAL AND REGULATORY PROBLEMS FOR CURRENT SECONDARY USERS

The Petitioners’ proposal to add a new secondary allocation in the 14.0–14.5 GHz Ku-band for CII and other commercial users does not serve the public interest. Introducing potentially millions of terrestrial fixed service systems⁸ in the band will generate harmful interference to currently constructed FSS networks already intensively used by the public.

Such interference would be particularly debilitating to current and contemplated secondary satellite transmissions in the 14.0–14.5 GHz band. While secondary status would oblige the new terrestrial systems to avoid interference with primary fixed satellite services, no similar obligation automatically would protect current consumers of secondary Ku-band downlinks. Yet, Petitioners never analyze the effect of adding terrestrial fixed systems on AMSS, much less explain how their proposed new service would protect AMSS downlinks from harmful interference. Indeed, the technical appendix attached to the Petition (“the RKF Report”) makes only a passing, generalized reference to MSS secondary users. It does not differentiate AMSS from VSAT systems or even distinguish MSS from FSS interference mitigation.⁹

⁷ Petition at 3.

⁸ *See id.* at 2.

⁹ RKF Engineering, LLC, Sharing Frequencies for FSS and FS Services in the 14.0-14.5

Moreover, even assuming UTC's proposed techniques could mitigate interference to primary fixed satellite service operations, they are inadequate to ensure reliable protection of secondary links, which principally serve mobile users.

Further, the RKF Report acknowledges that its proposed interference-mitigation techniques are in early development and makes no assurance of ever achieving the necessary performance levels.¹⁰ For instance, no one knows whether cognitive radios, designed to sense the environment and avoid using an affected frequency, could avoid interference with Ku-band spread-spectrum users or even detect highly directional emitters that lie in the path of a CII radio.¹¹ This is a particular concern for Ku-band equipped aircraft, for which pre-flight and post-flight communications represent sixty percent of their total log-on time.

Given the likelihood of interference, and the Petition's omissions and uncertainties, the UTC/Winchester proposal presents a regulatory conflict with pending rulemaking proceedings to adopt service rules for AMSS and VMES. To avoid impairing the further development of AMSS and VMES, ARINC requests that the Commission complete its consideration of pending expressions of interest for expanded use of the 14.0–14.5 GHz Ku-band before addressing adding new allocations to the band.¹² In particular, were the Commission ultimately inclined to launch a proceeding to consider secondary terrestrial fixed use of the band, the agency—as part

(Continued . . .)

GHz Band, §§ 1.3, 3 (2008) (filed as attachment to Petition) (“RKF Report”).

¹⁰ *Id. at* § 1.3.

¹¹ If cognitive radios or other technological means are approved as a method of determining clear channels in this band, they should at a minimum be able to shut down, in the event of interference, within the same or less time that other secondary terminals must cease transmission, or 250 milliseconds.

¹² *See supra* notes 4 & 5.

of the current rulemakings—first should elevate domestic AMSS downlinks to primary status. Doing so would provide the required regulatory protection from harmful interference from possible future secondary fixed systems.

III. ANTICIPATED INTERFERENCE FROM EXISTING USERS OF THE 14.0–14.5 GHZ BAND UNDERMINES THE PETITIONERS’ STATED CII USE

Apart from the harmful interference to Ku-band downlinks, the UTC/Winchester Petition falls well short of warranting adoption of a Notice of Proposed Rulemaking, for several reasons. *First*, it is internally inconsistent. Though the Petition emphasizes enhancing the public safety aspects of CII, it seeks authorization for widespread commercial use when the spectrum is not needed by CII. Indeed, it envisions ubiquitous operations under normal conditions, involving grid management, subscriber applications, and customer-based equipment, transmissions having no apparent connection to public safety.

~~*Second*, its spectrum selection is illogical. The Petition highlights the need for high-~~ reliability CII links, yet asks for frequencies already intensely used, meaning its secondary links routinely would be subject to numerous potential interferers. Although Petitioners claim to have considered the problem, their mitigation analysis assumes—unrealistically and without substantiation—narrowband satellite transmissions;¹³ they disregard abundant Ku-band spread-spectrum operations. Indeed, the requested 14.0–14.5 GHz spectrum is susceptible to rain fade, making the new terrestrial networks particularly vulnerable in weather-related emergencies.

Finally, the Petition is incomplete. It offers no support for the claim that CII requires a dedicated nationwide broadband grid, or that other more suitable spectrum is not available for both CII and commercial operations. Especially because the requested secondary allocation would engender harmful interference to primary and secondary users of FSS networks,

¹³ See RKF Report at 21.

Petitioners have not established that further consideration of their proposal would be in the public interest.

IV. CONCLUSION

For the reasons stated above, ARINC urges the Commission to deny the Petition. If the Commission does not deny the Petition, ARINC respectfully requests that the Commission first complete the pending AMSS and VME rulemakings and afford primary status to AMSS users of the 14.0–14.5 GHz band before adopting any NPRM examining additional allocations in the Ku-band.

Respectfully submitted,

By: 

Robert L. Pettit

Jennifer D. Hindin

Carl R. Frank

Josh Abbott

Of

Wiley Rein LLP

1776 K Street NW

Washington, DC 20006

Dated: June 26, 2008

Attorneys for ARINC Incorporated

CERTIFICATE OF SERVICE

I, Pam Conley, do hereby certify that on June 26, 2008, I served a copy of the Opposition of ARINC Incorporated upon the following parties by U.S. first-class mail, postage pre-paid:

Henry Goldberg
Jonathan Wiener
Devendra T. Kumar
GOLDBERG, GODLES, WIENER
& WRIGHT
1229 19th St., N.W.
Washington, DC 20036
(202) 429-4900 – Telephone
(202) 429-4912 – Facsimile

Counsel to Winchester Cator, LLC

Thomas S. Tycz
GOLDBERG, GODLES, WIENER
& WRIGHT
1229 19th Street, N.W.
Washington, DC 20036
(202) 429-4900
Senior Policy Advisor

Jill M. Lyon
Utilities Telecom Council
Vice President and General Counsel
1901 Pennsylvania Avenue, NW
Fifth Floor
Washington, DC 20006
(202) 872-0030 – Telephone

/s/ Pam Conley
Pam Conley